How to make public EV charging accessible

Design guidance for accessible public electric vehicle charging

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Introductions



Hazel Boyd User Experience Researcher



Keir Haines Senior Product Designer



Who is this webinar for?

Procurers of public EV charging points

Further stakeholders e.g. EV charging point hosts and installers

What will this webinar cover?

- Why should you consider accessibility?
- How did we develop this design guidance?
- How does this relate to the BSI standard PAS 1899:2022?
- Explore the three sections of the design guidance:
 - Signage and information
 - Built environment
 - Charging an electric vehicle
- Other useful resources on the design guidance website

- What might you do next?
- Time for your questions

Why should you consider accessibility?

Estimated by 2035:

2.7 million disabled drivers or passengers in the UK

- 1.35 million partially or fully reliant on public EV charging
- ⊘ Over 600,000 Motability scheme customers will be EV users
- Lack of accessibility across the public EV charging infrastructure
 Better accessibility improves the charging experience for all "It's the right thing to do"







Vision for public EV charging

No one should be left behind in the transition to electric vehicles

> EV charging infrastructure needs future-proofing for accessibility

How was this design guidance developed?

- Conducted practical research and design activities directly with disabled drivers and passengers.
- Understand how charging infrastructure is failing disabled people and then explore what accessible design solutions might look like [human centred design process]
- Develop and disseminate this knowledge further with industry through Design Guidance



Range of mobility needs

- People who reported issues with; mobility, strength, dexterity, stamina and those with the use of only one upper limb.
- Both seated and standing users; manual and electric wheelchair, walking stick(s), crutch(es), walking frame, prostheses and those who use no mobility aids.
- Existing electric car users and those who have never charged an electric vehicle before.



How does our design guidance relate to the BSI standard PAS 1899:2022?

Standard - BSI

- Publicly Accessible Specification or "PAS" launched October 2022
- Sponsored by Motability and OZEV
- Detailed requirements and recommendations

Design guidance - Designability

- Design guidance and design examples
- Practical guidance to help apply the requirements of the standard
- Focus on 'the charging process'





Our design guidance

Signage and information



Built Environment



Charging an electric vehicle



Signage and information >



Information about charging points

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It's so frustrating when I can't tell if the charge point will be accessible when I get there – it makes me anxious about my journey.

Information about charging points

Before arriving at the charging point:

Accessibility

- Parking space size
- Level access
- Close to toilet

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Usable charging unit

General

- Suitable charging type
- Exact location
- Available
- Working

. . .

⊘How to access – app?

Navigation signage

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I hate it when I get to a car park entrance, and it takes me ages to find the charge points.





Signage at the charging point





Built environment >



Space around the vehicle

Space **beside** a vehicle to: Open both doors fully

Walk and wheel

Transfer to wheelchair



Space around the vehicle

Space at **both ends** of vehicle enables:



(5) -(6) (2) _(1) -(3)

Charging unit position

Kerbs and obstructions can prevent access to well-designed units



Charging unit location and environment

Lighting and shelter

No shrubs or trees



Toilets Cafe

Flat, smooth ground

Charging an electric vehicle >



See, reach and use parts of the charging unit

See recognisable, visible

Reach horizontal and vertical

Use grip, actions, one or two hands

This all applies to people who are seated or standing



Start, stop and pay for charging

- Simple process with few steps
- Provide choice of format or method "Accessible" is not a single solution





Start, stop and pay for charging

Let users know:

What to do (clear instructions)

Whether they were successful (feedback)

What is happening **now** (status)

2. Plug in the connector



Processing...



Start, stop and pay for charging

What if something goes wrong?



Cables and connectors – big challenges

Key barriers to effective use:

 Cable - length, weight, stiffness
 Connector design – limited grip options





Our charging unit prototypes





Support the cable weight







Cable management



Cables

Make the cable flexible (for small spaces **and** long cables)



Connectors

- Range of grip positions
- Push, pull and carry with low dexterity
- One or two hands







Sockets – see, reach and use





Sockets – height



Socket cover – single handed use





In summary

- Why should you consider accessibility?
- How we developed the design guidance with disabled people

Design Guidance

- Signage and information
- Built environment
- Charging an electric vehicle



Also on the Design Guidance website...



Also on the Design Guidance website...

Design Guidance Accessible EV charging			design ability
	About the design guidance 🐱	Design guidance Case studies	The basics 🐱 Contact us
Explore the design guidance			
Signage and information	Built environment	Charging an electric	Resources
Information about charging points	Space around the vehicle	vehicle	Our charging unit prototypes
Signage	Charging unit position and location	See reach and use parts of the	The standard

Charging unit position and location

See, reach and use parts of the charging unit

Start, stop and pay for charging

Connectors

Cables

Sockets

Further reading

Case studies



What might you do next?

- Explore our Design Guidance website
- Raise awareness with your colleagues
- Share the guidance with your industry connections

Procurers/commissioners

Incorporate the Design Guidance and PAS 1899:2022, BSI standard into your tender documentation



Design Guidance download



Live Q&A – Your questions





Accessible EV Charging

Thank you

https://accessibleevcharging.designability.org.uk/





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